

ABSTRACT OF DISCLOSURE

An optical fiber probe generates an electrical potential difference formed between thin metal layers coated thereon to increase a light transmission rate. The optical fiber probe includes a near-field probe having a core transmitting light incident from an external light source and having a circular cone structure formed on an end of the core, and a cladding coated on a surface of the circular cone structure core to protect the core. The optical fiber probe also includes the thin metal layers coated on the near-field probe, symmetrically disposed on opposite sides of the near-field probe, and spaced-apart from each other to generate the electrical potential difference.